

Detailed Action

1. This Office Action is submitted in response to the telephone interview of 10-28-2011 (see attached summary). Claims 14-20 are pending.

Examiners Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Lambert on 10-28-2011. The changes made below have underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

The Claims are amended as follows;

-- 14. (Currently Amended) A projection-type image display apparatus comprising:

a light source;

a modulator ~~modulation means~~ for modulating and outputting light radiated from the light source based on a video signal; and

a projection optical system for enlarged projection from a primary image surface toward the modulator ~~modulation means~~ to a secondary image surface toward a screen,

wherein the projection optical system comprises:

a first optical system that forms an intermediate image of the primary image surface; and

a second optical system having a concave reflector that forms the secondary image surface according to the intermediate image.

wherein the concave reflector is unique to the second optical system and has an unused part removed when placed to the side of the secondary image surface, and

wherein the first optical system forms an intermediate image of the primary image surface independently from the second optical system, the intermediate image being formed between the first optical system and the second optical system,

wherein the second optical system comprises a concave reflector that forms a secondary image independently from the first optical system, the secondary image corresponding to the secondary image surface according to the intermediate image, and

wherein as a light beam travels from the center of the primary image surface to the center of the secondary image surface, it crosses an optical axis of the first optical system, reflects on the concave reflector, crosses the optical axis again, and reaches the secondary image surface. --

-- 16. (Currently amended) The projection-type image display apparatus according to claim 14,

wherein the screen is transmissive;

wherein the screen is disposed at the front of a cabinet that contains the light source, the modulator ~~modulation means~~, and the projection optical system; and wherein the projection optical system provides enlarged projection onto the transmissive screen from its rear. --

-- 19. (Currently amended) The projection-type image display apparatus according to claim 14,

wherein as a light beam travels from the center of the primary image surface to the center of the secondary image surface it ~~and~~ crosses the optical axis within a vertical plane; and

wherein there is provided a reflector ~~reflection means~~ that reflects the light beam between the first and second optical systems and deflects the light beam within a horizontal plane. --

Allowable Subject Matter

3. Claims 14-20 are allowed

Examiner's statement of reasons for allowance

The following is an examiner's statement of reasons for allowance:

4. The prior art discloses nearly all the limitations of the claimed projection-type image display apparatus having first and second optical systems, where the second optical system has a concave reflector that forms a secondary image surface according to the intermediate image formed by the first optical system (See USPN 6,619,804 to Davis; and USPN 6,233,024 to Hiller), but the prior art fails to disclose the use of a second optical system having a concave reflector that is unique to the second optical system and has an unused part removed when placed to the side of the secondary image surface.

5. Claim 14 is allowed because the prior art fails to disclose a projection-type image display apparatus having first and second optical systems, where the second optical system has a concave reflector that forms a secondary image surface according to an intermediate image formed by the first optical system, where the concave reflector is unique to the second optical system and has an unused part removed when placed to the side of the secondary image surface.

6. Claims 15-20 are allowed by virtue of their dependency upon allowed claim 14.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor Robert Kim can be reached at (571) 272-2293. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ
October 31, 2011

/PHILLIP A JOHNSTON/
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